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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.
09/362,698	07/29/99	KATO	T 684.2621CIP

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EXAMINER

WINSTEDT, J

ART UNIT

PAPER NUMBER

2872

DATE MAILED:

04/25/01

**Please find below and/or attached an Office communication concerning this application or proceeding.**

**Commissioner of Patents and Trademarks**

**Office Action Summary**

Applicati n No.

09/362,698

Applicant(s)

KATO ET AL.

Examiner

Jennifer E Winstedt

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136 (a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 28 February 2001.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-17 is/are pending in the application.
- 4a) Of the above claim(s) 6-11, 13, 15 and 17 is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-5, 12, 14 and 16 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claims \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 29 July 1999 is/are objected to by the Examiner.
- 11) ☐ The proposed drawing correction filed on \_\_\_\_\_ is: a) ☐ approved b) ☐ disapproved.
- 12) ☐ The oath or declaration is objected to by the Examiner.

**Priority under 35 U.S.C. § 119**

- 13) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☒ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☒ Certified copies of the priority documents have been received in Application No. 09/019,697.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgement is made of a claim for domestic priority under 35 U.S.C. § 119(e).

**Attachment(s)**

- 15) ☒ Notice of References Cited (PTO-892)
- 16) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 17) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) \_\_\_\_\_
- 18) ☐ Interview Summary (PTO-413) Paper No(s). \_\_\_\_\_
- 19) ☐ Notice of Informal Patent Application (PTO-152)
- 20) ☐ Other:

## **DETAILED ACTION**

### ***Election/Restrictions***

1. Claims 6-11, 13, 15, and 17 are withdrawn from further consideration pursuant to 37 CFR 1.142(b), as being drawn to a nonelected species, there being no allowable generic or linking claim. Applicant timely traversed the restriction (election) requirement in Paper No. 5.

2. Applicant's election with traverse of species in Paper No. 5 is acknowledged. The traversal is on the ground(s) that neither the applicants nor the Patent and Trademark Office should be put through the trouble and expense entailed in multiple filing and prosecution and the public-at-large should not be required to obtain and study several patents in order to having available all of the issued patent claims covering the subject invention. This is not found persuasive because the applicants still claim more than one patentably distinct species.

The requirement is still deemed proper and is therefore made FINAL.

### ***Priority***

3. Acknowledgment is made of applicant's claim for foreign priority under 35 U.S.C. 119(a)-(d). The certified copy has been filed in parent Application No. 09/019697, filed on 2/6/98.

Acknowledgment is made of applicant's claim for foreign priority based on applications filed in Japan on 7/31/98 and 8/6/98. It is noted, however, that applicant

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has not filed certified copies of the 10-230275, 10-234928, and 10-234929 applications as required by 35 U.S.C. 119(b).

### ***Drawings***

4. The drawings are objected to as failing to comply with 37 CFR 1.84(p)(4) because reference character "3014" has been used to designate both a diffractive optical element (see Figure 69) and a protrusion (see Figure 66). Correction is required.
5. The drawings are objected to as failing to comply with 37 CFR 1.84(p)(5) because they do not include the following reference sign(s) mentioned in the description: 1007 and 42. Correction is required.
6. The drawings are objected to as failing to comply with 37 CFR 1.84(p)(5) because they include the following reference sign(s) not mentioned in the description: 31 (see Figure 38) and 2042. Correction is required.

### ***Specification***

7. The disclosure is objected to because of the following informalities:
- ✓ Page 25, line 9, "described" should be "described.";
  - ✓ Page 37, line 23, "agent ant" should be "agent and";
  - ✓ Page 44, lines 10-11, "the plane plane opposite" should be "the plane opposite";
  - ✓ Page 45, line 12, "thee-point abutment" should be "three-point abutment";
  - ✓ Page 45, line 17, "mark scope 2023" should be "mark scope 2030";

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- √ Page 46, line 15, "turns" should be "turn";
- √ Page 46, lines 20-23, "they are they are directly" should be "they are directly";
- √ Page 51, line 17, "parallel plane plate 2021" should be "parallel plane plate 2020";
- √ Page 52, lines 12-13, "parallel plane plate 2021" should be "parallel plane plate 2020";
- √ Page 53, line 8, "plate 2031" should be "plate 2032";
- √ Page 58, lines 7-8, "plane-convex lens 42" should be "plane-convex lens 2042";
- √ Page 58, line 10, "plane-convex lens 2043" should be "plane-concave lens 2043";
- √ Page 58, line 11, "Figure 51" should be "Figure 52";
- √ Page 58, line 14, "Figure 52" should be "Figure 51";
- √ Page 59, line 13, "parallel plane plate 2048" should be "parallel plane plate 2047";
- √ Page 69, line 27, "diffractive optical element 3022) should be "diffractive optical element 3016";
- √ Page 71, line 1, "pressing member 3021" should be "pressing member 3026";
- and
- √ Page 74, line 9, "plate holder 3014" should be "plate holder 3034".

Appropriate correction is required.

***Claim Rejections - 35 USC § 102***

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8. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

(e) the invention was described in a patent granted on an application for patent by another filed in the United States before the invention thereof by the applicant for patent, or on an international application by another who has fulfilled the requirements of paragraphs (1), (2), and (4) of section 371(c) of this title before the invention thereof by the applicant for patent.

9. Claims 1, 2, 4, and 5 are rejected under 35 U.S.C. 102(b) as being anticipated by Buralli et al. (U.S. Patent 5,013,133).

Regarding claim 1, Buralli et al. discloses an optical system comprising a diffractive optical element having a diffractive optical surface (DOE, Figure 3) and means for preventing a change in optical performance of the optical system (Phase Corrector Plate, Figure 3) due to deformation of the diffractive optical element produced when the diffractive optical element is provided in the optical system.

Regarding claim 2, it is inherent that the deformation of the diffractive optical element of Buralli et al. produced when the same is provided in the optical system includes deformation by weight of the diffractive optical element because of the influence of gravity upon the diffractive optical element.

Regarding claims 4 and 5, Buralli et al. discloses that the preventing means includes an optical member having an optical characteristic that compensates for a change in optical performance due to deformation of the diffractive optical element (Phase Corrector Plate, Figure 3); wherein the optical member has at least one aspherical surface (column 6, lines 2-3).

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10. Claims 1 and 3 are rejected under 35 U.S.C. 102(b) as being anticipated by Tsuji et al. (U.S. Patent 4,983,017).

Regarding claim 1, Tsuji et al. discloses an optical system comprising a diffractive optical element having a diffractive optical surface (13, Figure 1); and means for preventing a change in optical performance of the optical system (see Figure 1) due to deformation of the diffractive optical element when the diffractive optical element is provided in the optical system.

Regarding claim 3, Tsuji et al. discloses that the deformation of the diffractive optical element produced when the same is provided in the optical system includes deformation produced when the diffractive optical element is fixed (see Figure 1, diffractive optical element is shown to be fixed).

11. Claims 1, 4, and 5 are rejected under 35 U.S.C. 102(b) as being anticipated by Londono et al. (U.S. Patent 5,260,828).

Regarding claim 1, Londono et al. discloses an optical system comprising a diffractive optical element having a diffractive optical surface (84, Figure 7); and means for preventing a change in optical performance of the optical system due to deformation of the diffractive optical element when the diffractive optical element is provided in the optical system (column 8, lines 30-35).

Regarding claims 4 and 5, Londono et al. discloses that the preventing means includes an optical member having an optical characteristic that compensates for a change in optical performance due to deformation of the diffractive optical element (80,

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Figure 7 and column 8, lines 30-35); wherein the optical member has at least one aspherical surface (column 8, lines 33-34).

12. Claims 14 and 16 are rejected under 35 U.S.C. 102(e) as being anticipated by Ushida et al. (U.S. Patent 5,754,340).

Regarding claim 14, Ushida et al. discloses a projection exposure apparatus comprising an illumination optical system for illuminating a pattern formed on a mask (10, Figure 7); and a projection optical system for projecting the pattern of the mask onto a wafer (16, Figure 7), the projection optical system including a diffractive optical element having a diffractive optical surface (22, Figure 7) and means for preventing a change in optical performance of the projection optical system due to deformation of the diffractive optical element when the diffractive optical element is provided in the projection optical system (24, Figure 7).

The method of claim 16 is inherent in the structure described above.

### ***Claim Rejections - 35 USC § 103***

13. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

14. Claim 12 is rejected under 35 U.S.C. 103(a) as being unpatentable over Londono et al. in view of Official Notice.



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Regarding claim 12, Londono et al. discloses the claimed invention as described above except for means for holding the optical system in an optical instrument. Official Notice is taken that means for holding optical systems in optical instruments are well known. It would have been obvious to one of ordinary skill in the art at the time the invention was made to have a means for holding the optical system of Londono et al. in an optical instrument so that the optical system would not fall to the ground.

### ***Conclusion***

15. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jennifer E Winstedt whose telephone number is (703) 305-0577. The examiner can normally be reached on 7:30 - 17:00 Mon. - Fri..

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Casandra Spyrou can be reached on (703) 308-1687. The fax phone numbers for the organization where this application or proceeding is assigned are (703) 308-7722 for regular communications and (703) 308-7722 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0956.

JW  
April 23, 2001



**Cassandra Spyrou**  
**Supervisory Patent Examiner**  
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